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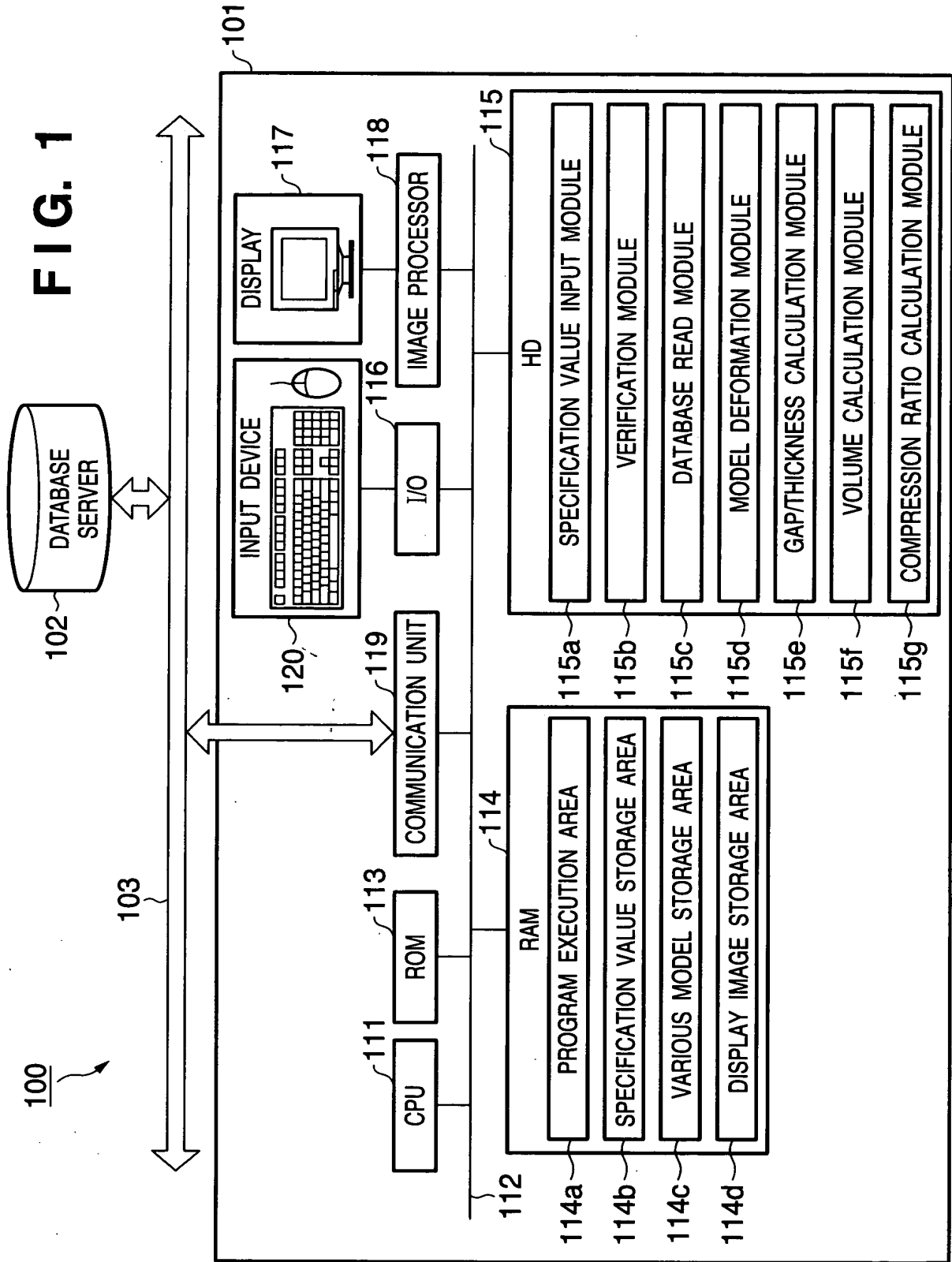
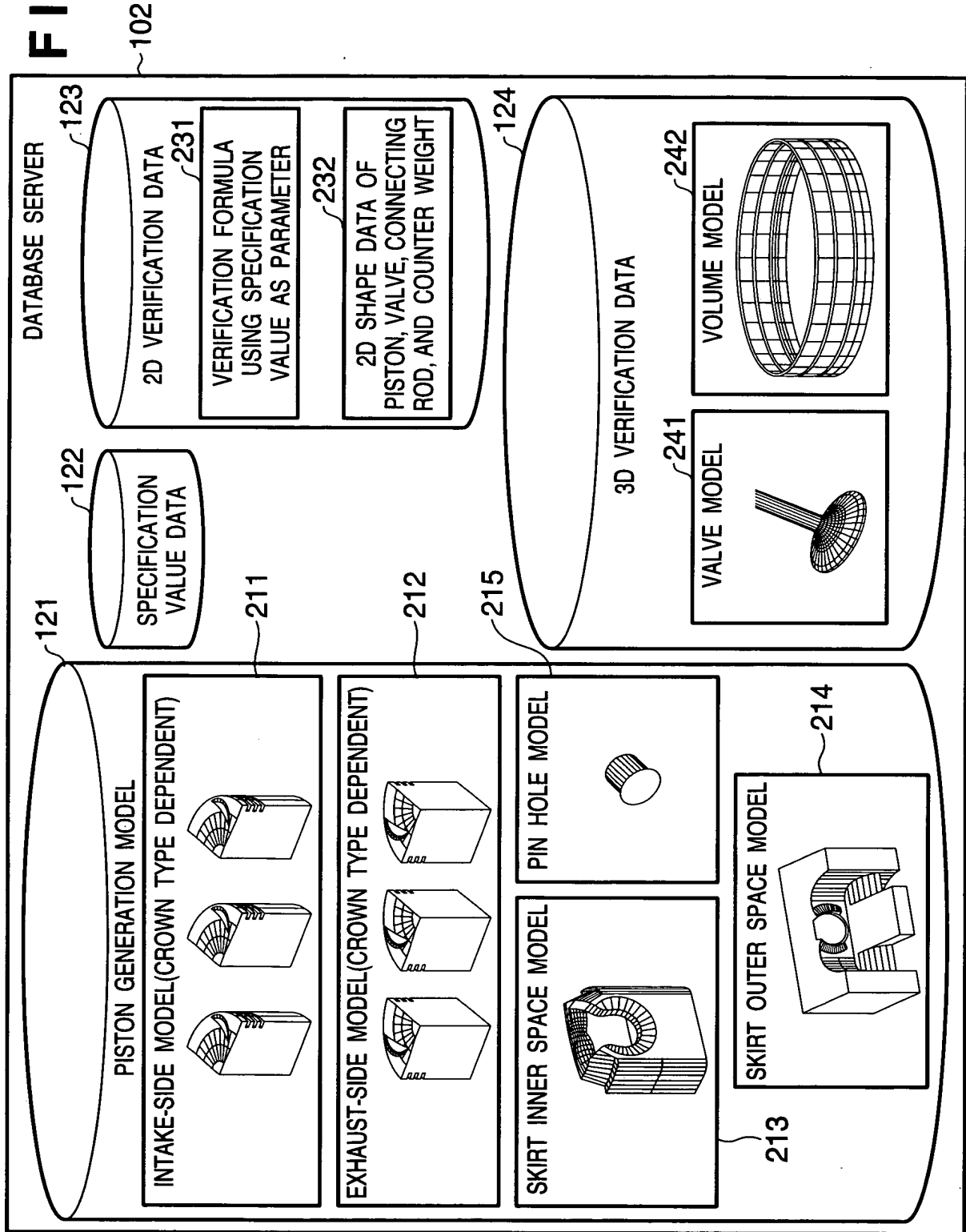
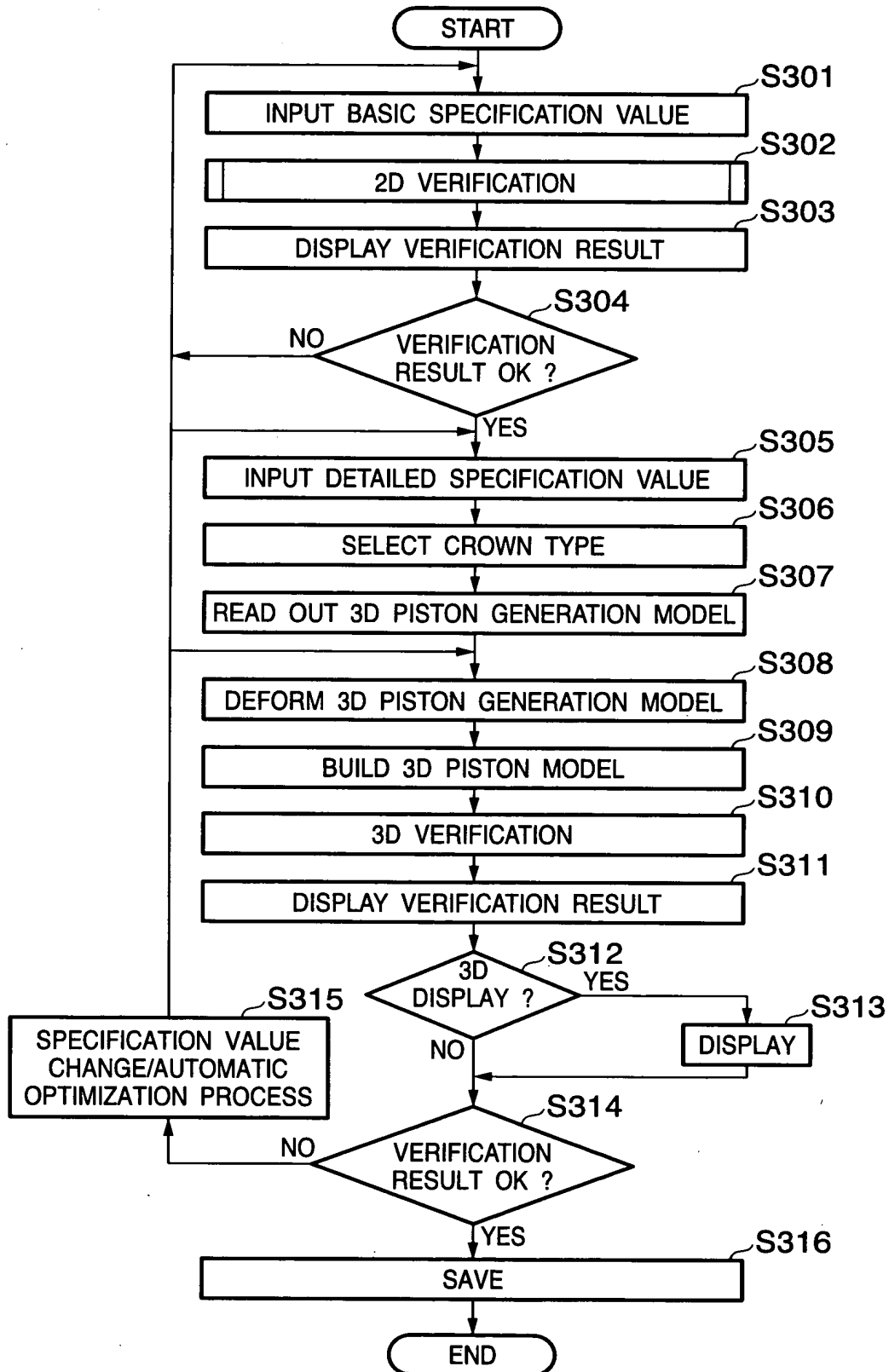


FIG. 2



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## FIG. 3



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FIG. 4A

SPECIFICATION VALUE INPUT	
TARGET VALUE	TARGET COMPRESSION RATIO: **
	MINIMUM THICKNESS REFERENCE: * mm TARGET CLEARANCE REFERENCE: * mm
CAM LIFT DATA	INTAKE SIDE: **/**.txt
VALVE TIMING	INTAKE SIDE: ** °CA
LAYOUT CONDITION	BORE DIAMETER: ** mm
	CONNECTING ROD LENGTH: ** mm
	COMBUSTION CHAMBER CAPACITY: ** cc
	INTAKE VALVE ANGLE: ** °
PISTON SPECIFICATION VALUE	PISTON DIAMETER: ** mm
	INTAKE RECESS CENTER: ** mm
	INTAKE RECESS DEPTH: ** mm
	CROWN THICKNESS: ** mm
	EXHAUST SIDE: **/**.txt
	EXHAUST SIDE: ** °CA
	CRANK DIAMETER: ** mm
	C/W VIRTUAL DISK RADIUS: ** mm
	VALVE CENTER HEIGHT: ** mm
	EXHAUST VALVE ANGLE: ** °
	EXHAUST RECESS CENTER: ** mm
	EXHAUST RECESS DEPTH: ** mm
VALVE SPECIFICATION VALUE	INTAKE VALVE DIAMETER: ** mm
	EXHAUST VALVE DIAMETER: ** mm

DIMENSION INDICATING SHAPE OF SKIRT INNER SPACE  
 DIMENSION INDICATING SHAPE OF SKIRT OUTER SPACE  
 DIMENSION INDICATING POSITION AND SHAPE OF RING GROOVE  
 DIMENSION INDICATING POSITION AND SHAPE OF PIN HOLE

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FIG. 4B

2D CALCULATION RESULT		REFERENCE	CALCULATED EVALUATION VALUE
MINIMUM THICKNESS OF SKIRT PORTION		* mm OR MORE TO * mm OR LESS	<ok>
PROXIMAL DISTANCE BETWEEN VALVE AND PISTON INTAKE SIDE		* mm OR MORE	<ok>
EXHAUST SIDE		* mm OR MORE	<ok>
MINIMUM GAP BETWEEN CONNECTING ROD AND CROWN BACK SIDE(FLAT TYPE BASE)		* mm OR MORE	<ok>
MINIMUM VALUE BETWEEN COUNTER WEIGHT AND PISTON		* mm OR MORE	<ok>

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3D VERIFICATION(FLAT)

412

3D VERIFICATION(CONVEX TYPE)

413

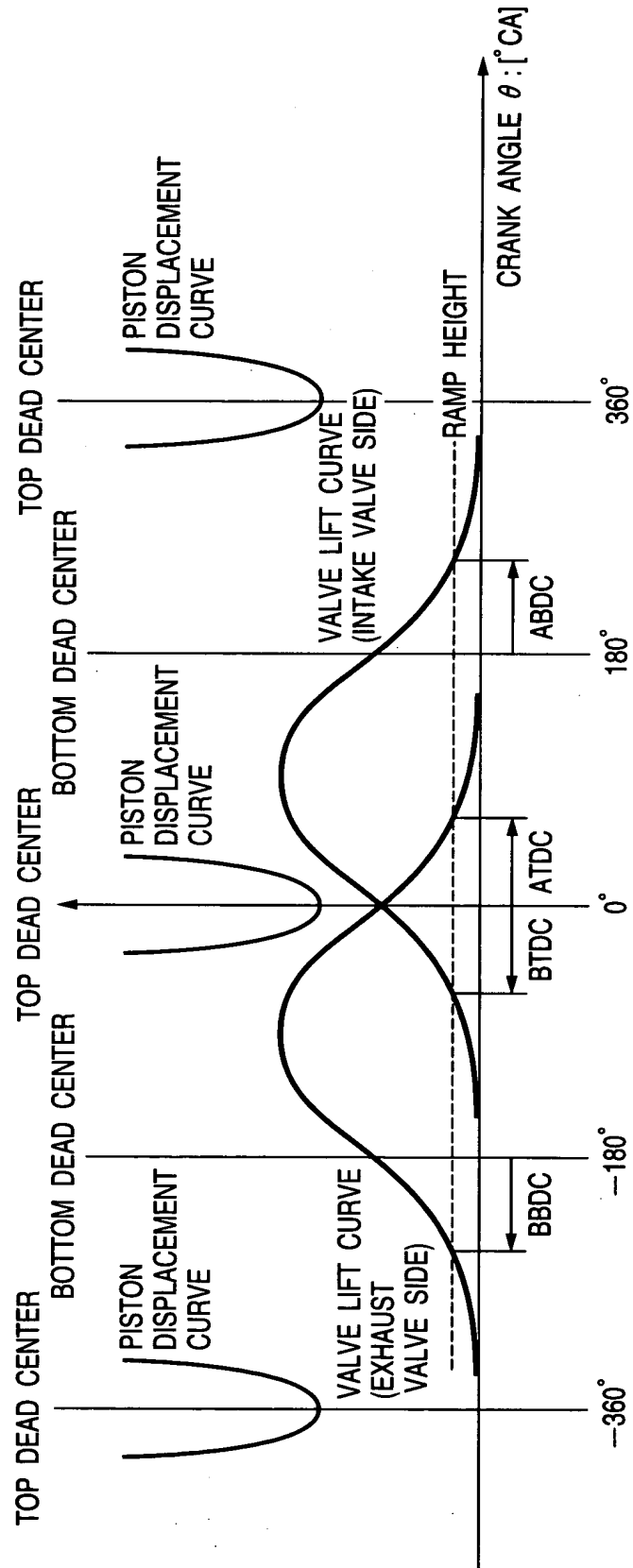
3D VERIFICATION(CONCAVE TYPE)

RE-INPUT DIMENSIONS

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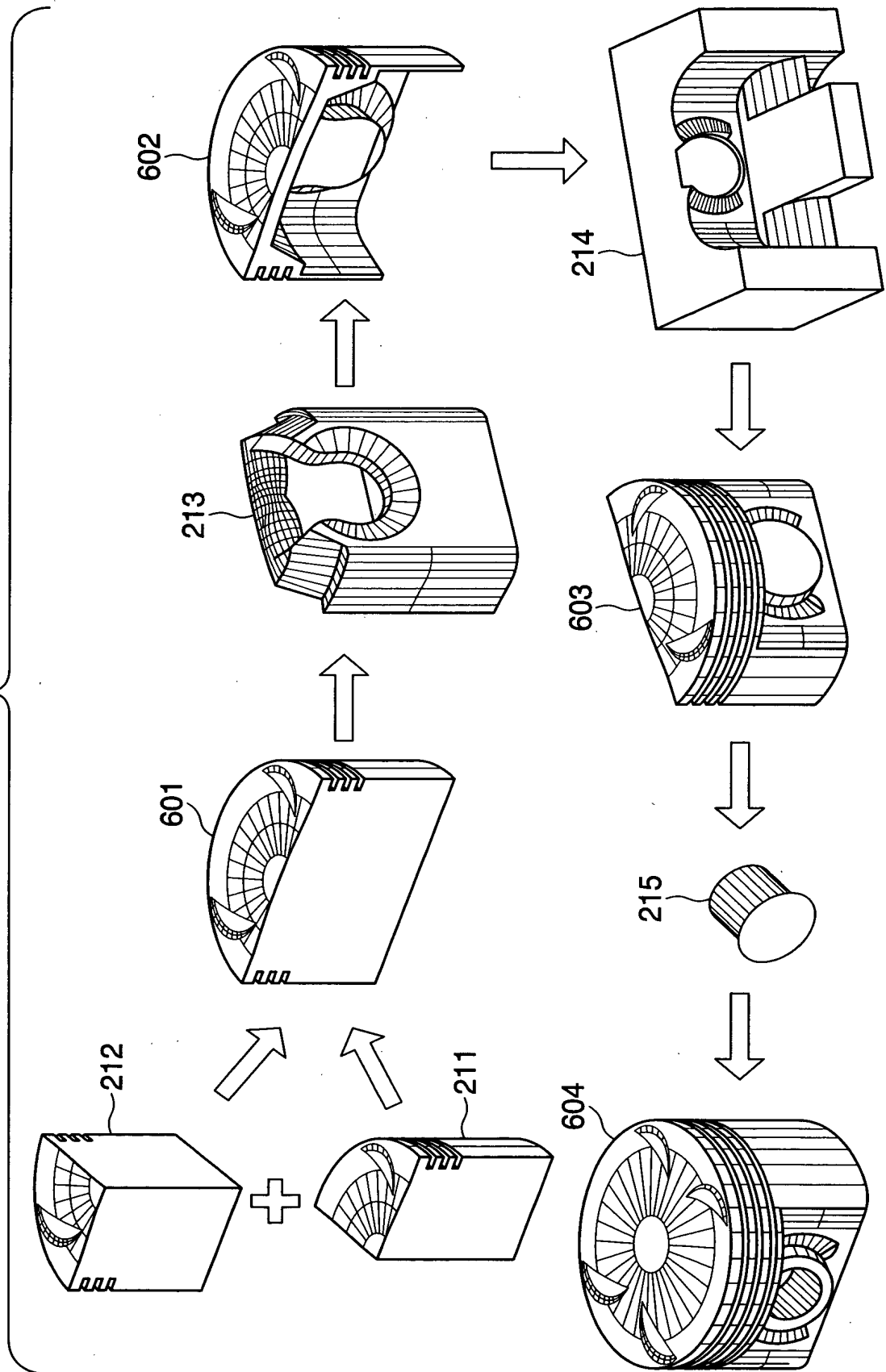
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FIG. 5



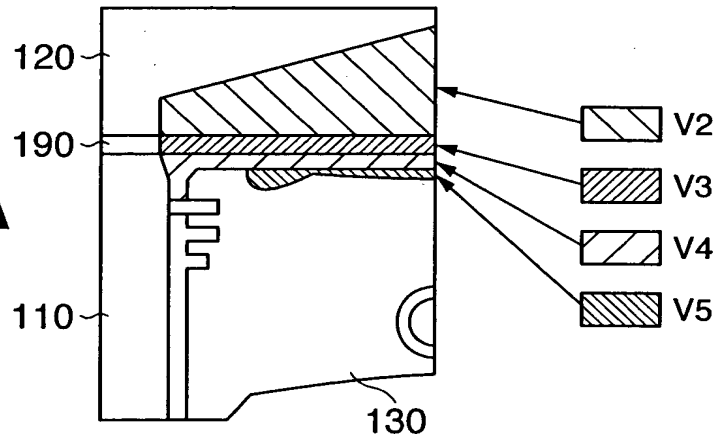
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FIG. 6

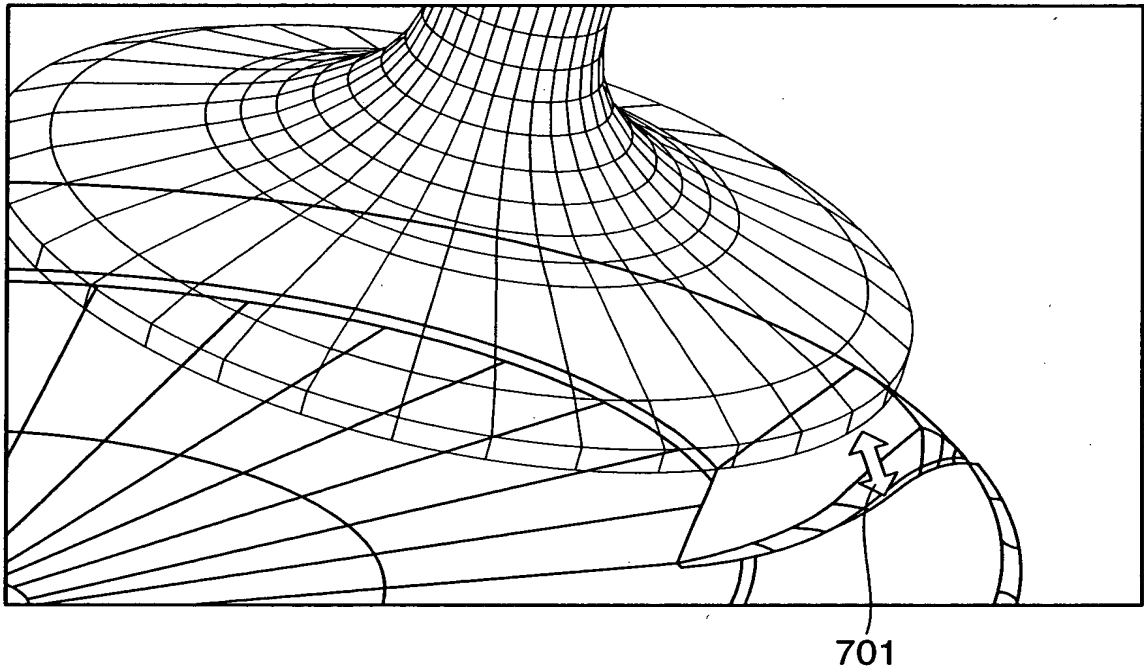


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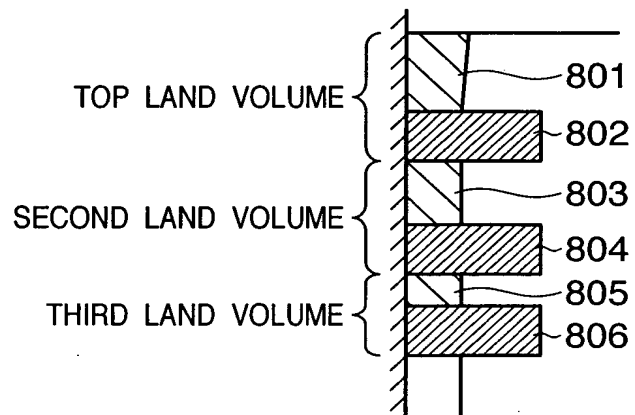
**FIG. 7A**



**FIG. 7B**



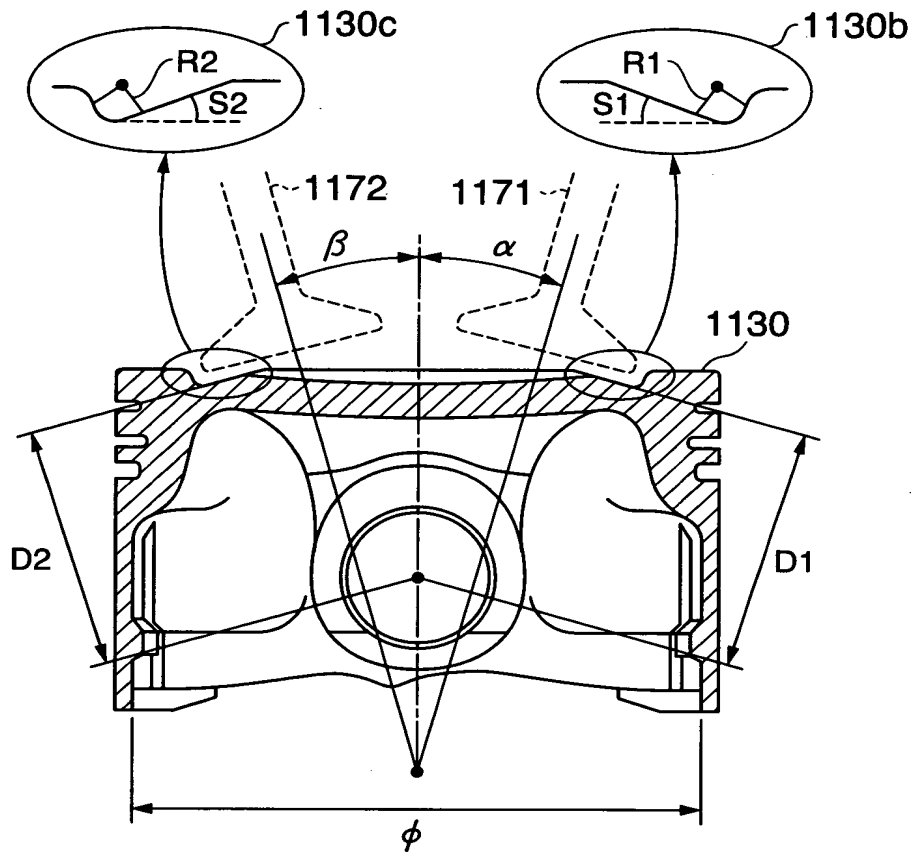
**FIG. 7C**



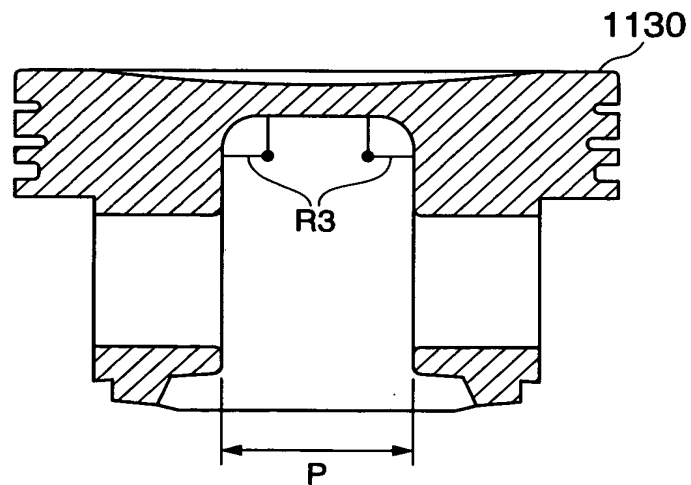
3D VERIFICATION RESULT			<input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
<COMPRESSION RATIO>			
• TARGET COMPRESSION RATIO(INPUT VALUE):	*.*.*.*		
• COMPRESSION RATIO(MEASUREMENT RESULT FROM 3D MODEL):	*.*.*.*		
<GAP AND THICKNESS>		MEASURED VALUE	EVALUATION
• VALVE-PISTON GAP			
INTAKE VALVE SIDE :	*.* mm	<ok>	
EXHAUST VALVE SIDE :	*.* mm	<ok>	
• SHORTEST DISTANCE BETWEEN CONNECTING ROD AND CROWN BACK SURFACE :		*.* mm	<ok>
• MINIMUM THICKNESS OF TOP RING CROOVE BACK SURFACE :		*.* mm	<ok>
• MINIMUM THICKNESS OF CROWN BACK SURFACE :		*.* mm	<NG>
<LAND VOLUME>			
• TOP LAND VOLUME :	1+2	*.*.*.*.*.*.*.* CC	
	1	*.*.*.*.*.*.*.* CC	
	2	*.*.*.*.*.*.*.* CC	
• SECOND LAND VOLUME :	3+4	*.*.*.*.*.*.*.* CC	
	3	*.*.*.*.*.*.*.* CC	
	4	*.*.*.*.*.*.*.* CC	
• THIRD LAND VOLUME :	5+6	*.*.*.*.*.*.*.* CC	
	5	*.*.*.*.*.*.*.* CC	
	6	*.*.*.*.*.*.*.* CC	
<div style="display: flex; justify-content: space-around; align-items: flex-end;"> <div style="text-align: center;"> <div style="margin-bottom: 5px;">811</div> <div style="border: 1px solid black; padding: 5px; width: 150px;">PISTON 3D DISPLAY</div> </div> <div style="text-align: center;"> <div style="margin-bottom: 5px;">812</div> <div style="border: 1px solid black; padding: 5px; width: 150px;">INNER SPACE SHAPE DISPLAY</div> </div> </div> <div style="display: flex; justify-content: space-around; align-items: flex-end; margin-top: 10px;"> <div style="text-align: center;"> <div style="margin-bottom: 5px;">813</div> <div style="border: 1px solid black; padding: 5px; width: 150px;">AUTOMATIC OPTIMIZATION</div> </div> <div style="text-align: center;"> <div style="margin-bottom: 5px;">814</div> <div style="border: 1px solid black; padding: 5px; width: 150px;">RE-INPUT SPECIFICATION VALUES</div> </div> <div style="text-align: center;"> <div style="margin-bottom: 5px;">815</div> <div style="border: 1px solid black; padding: 5px; width: 150px;">SAVE &amp; END</div> </div> </div>			

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**FIG. 9A**

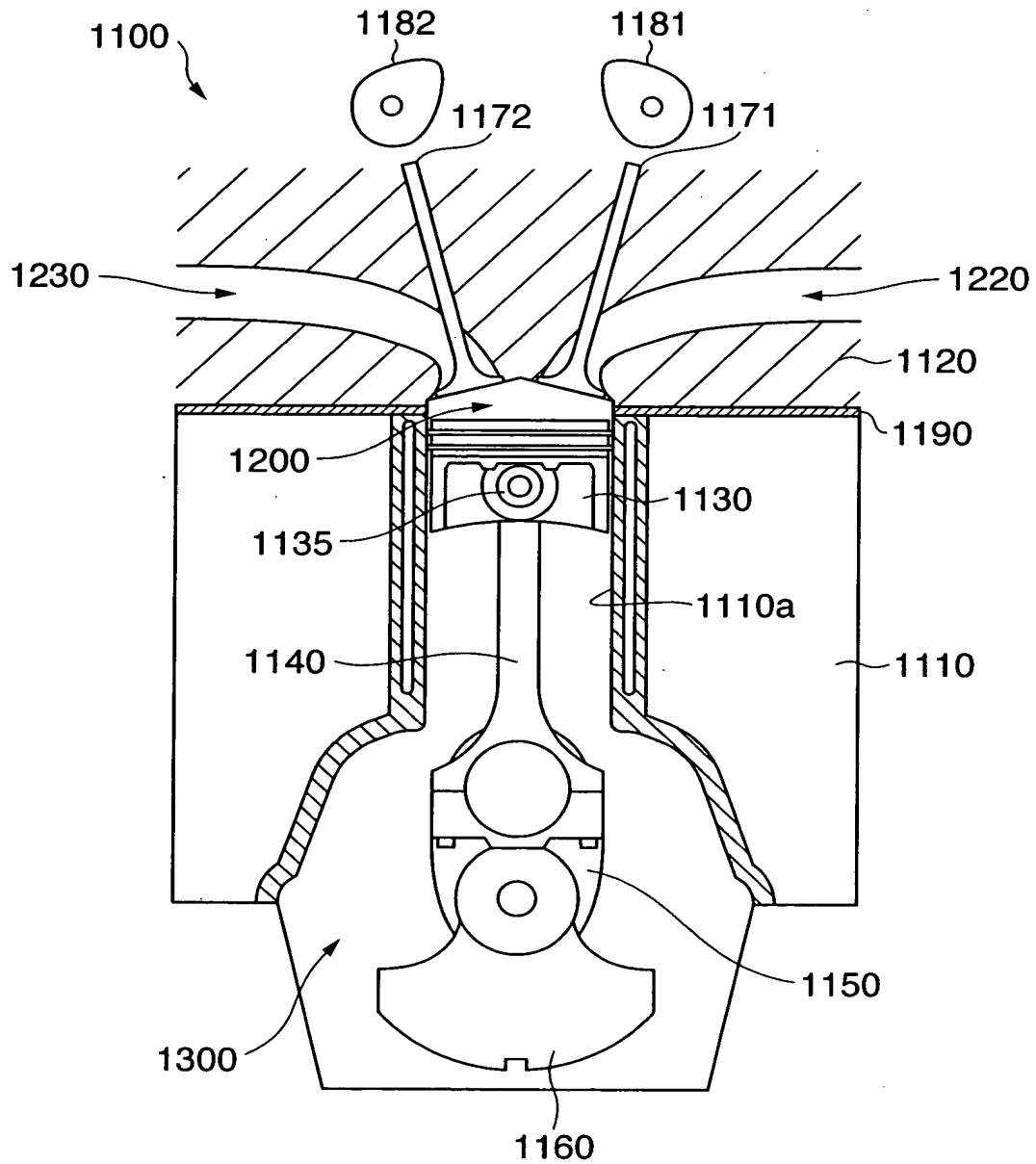


**FIG. 9B**



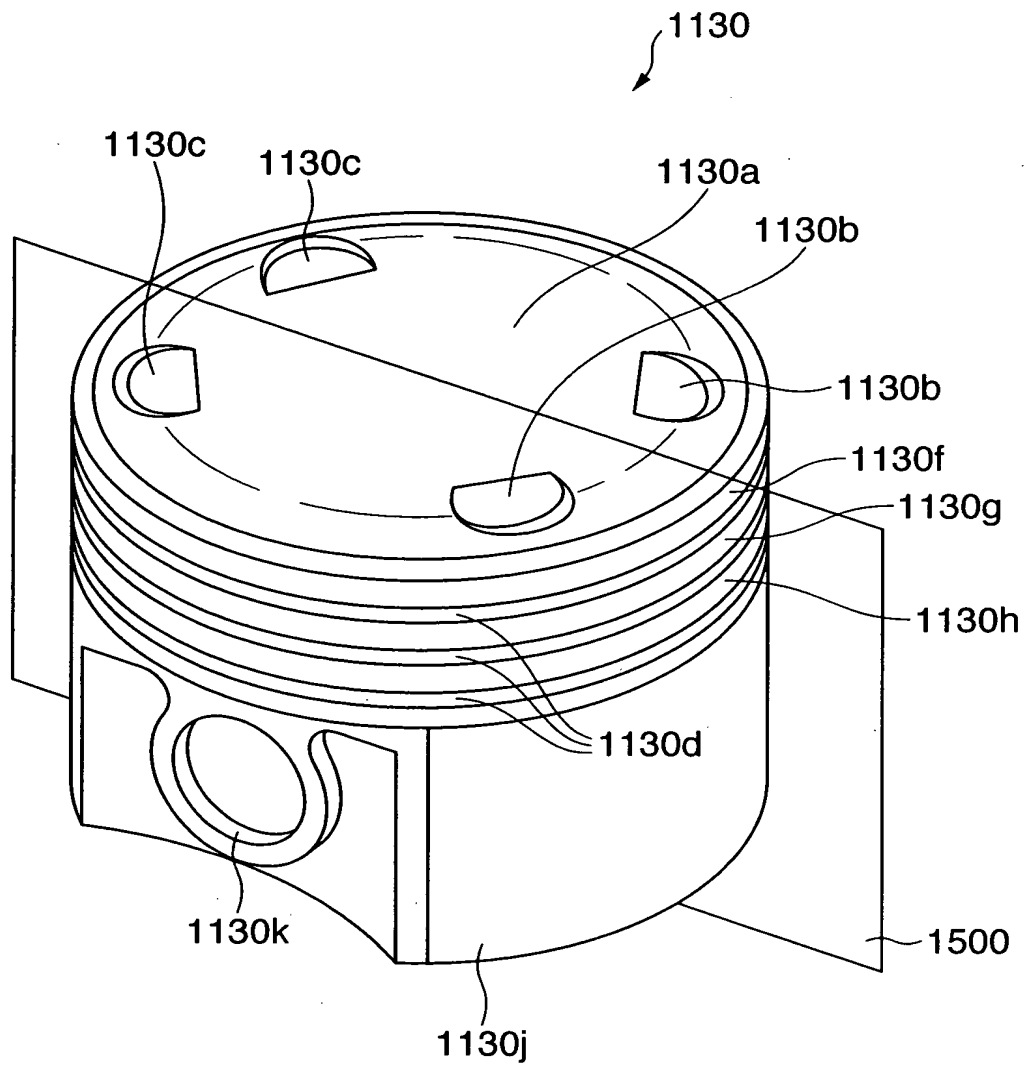
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**FIG. 10**



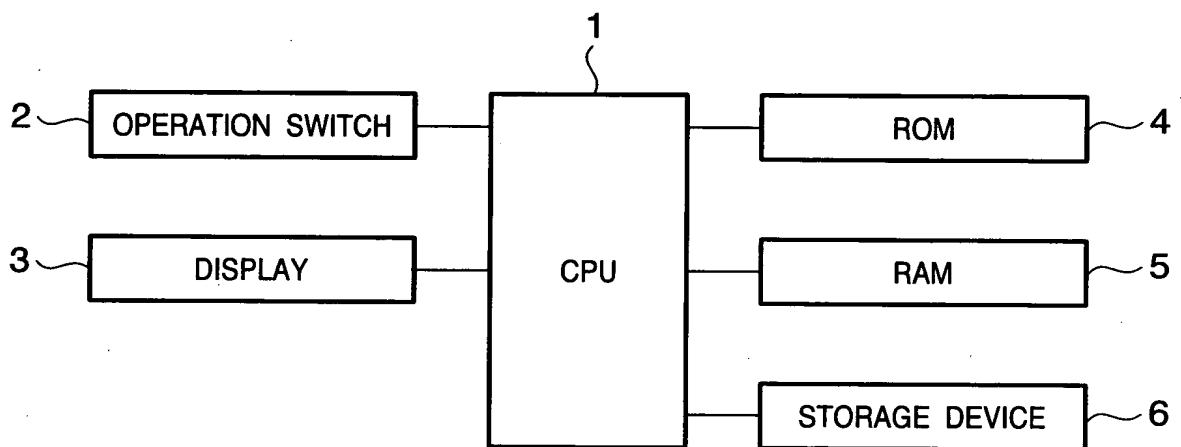
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**FIG. 11**



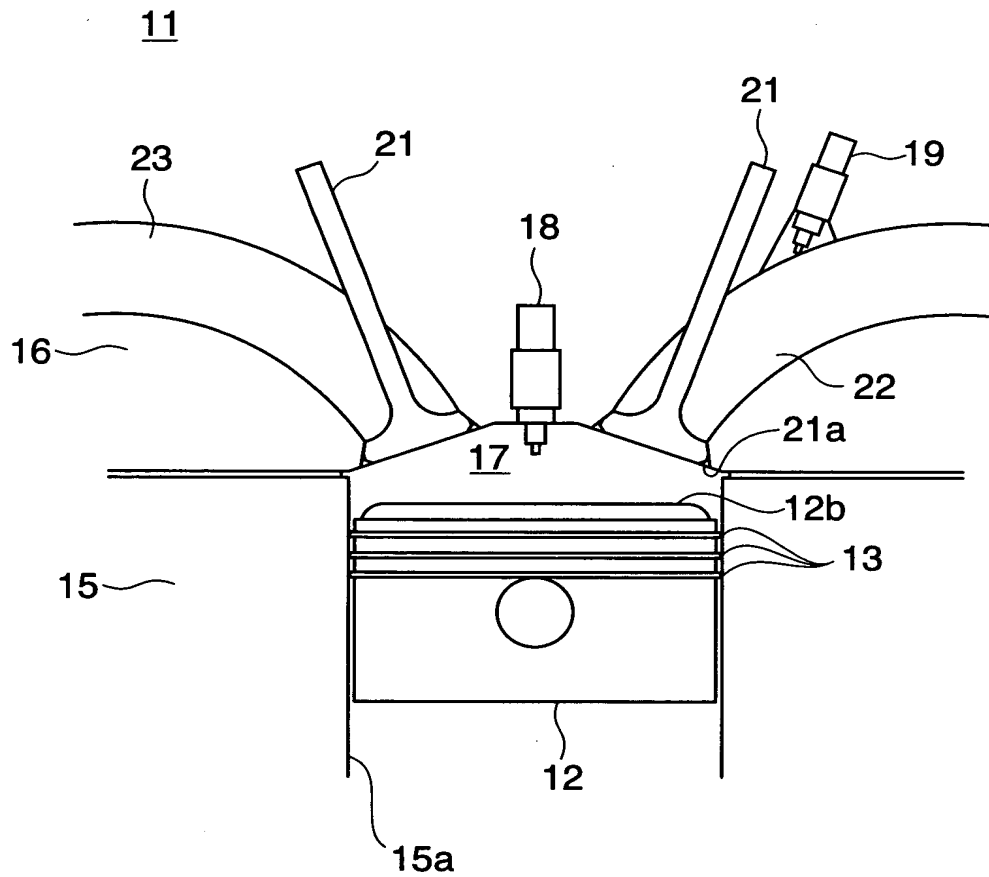
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**FIG. 12**



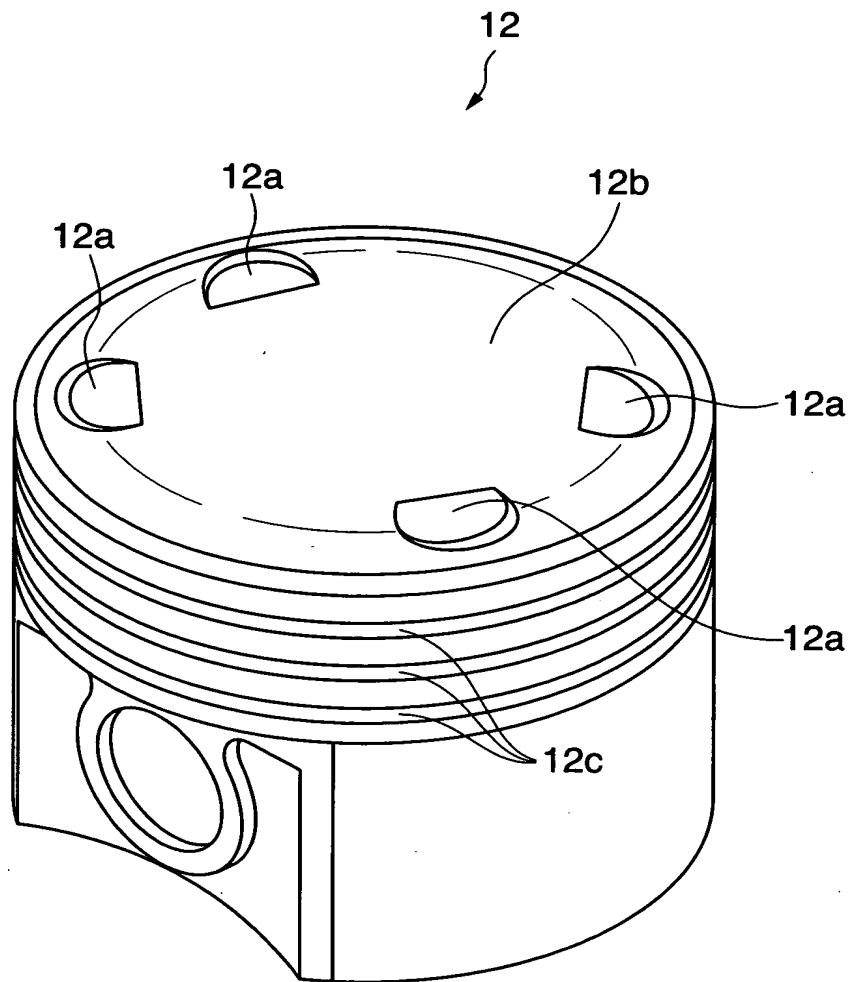
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**FIG. 13**



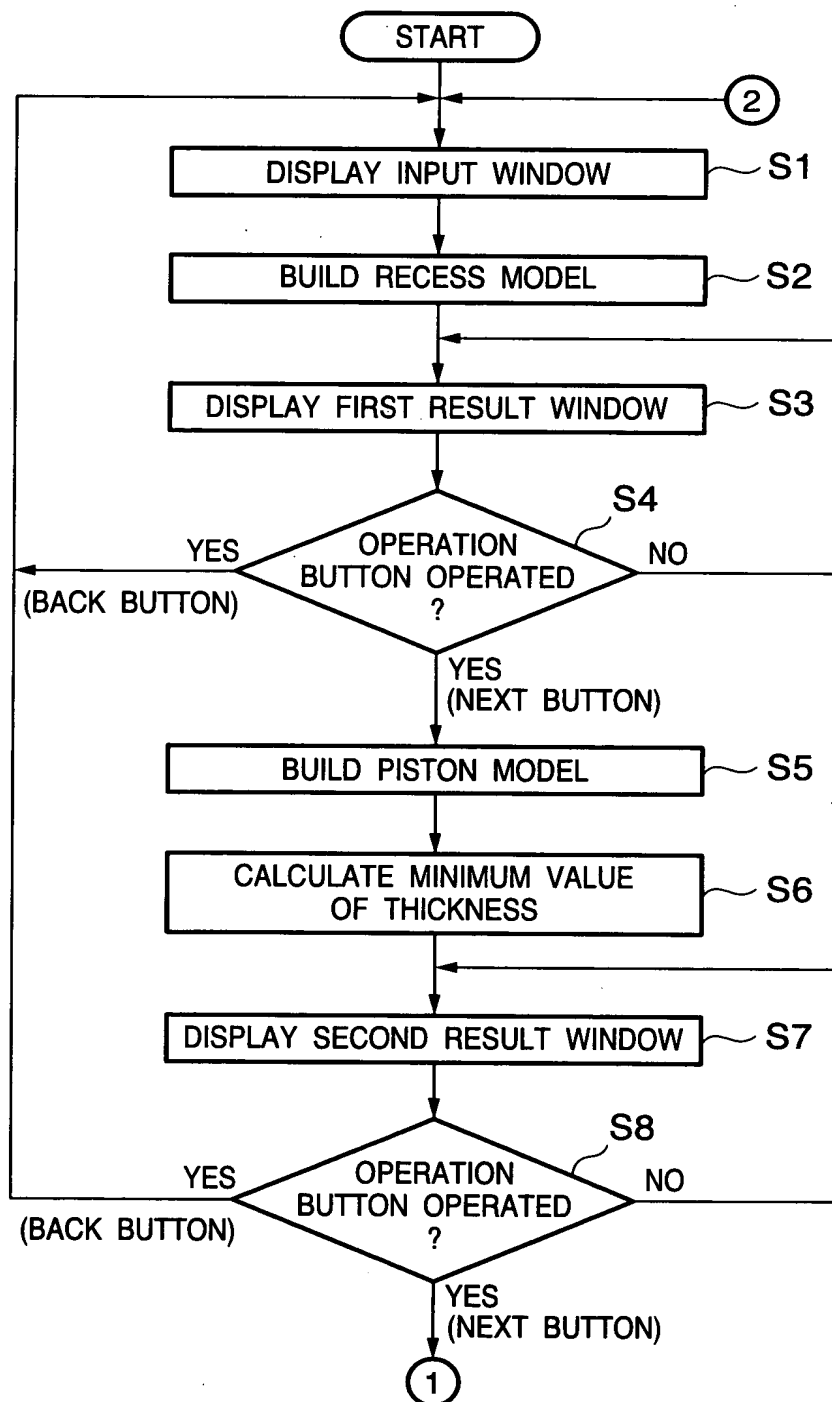
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**FIG. 14**



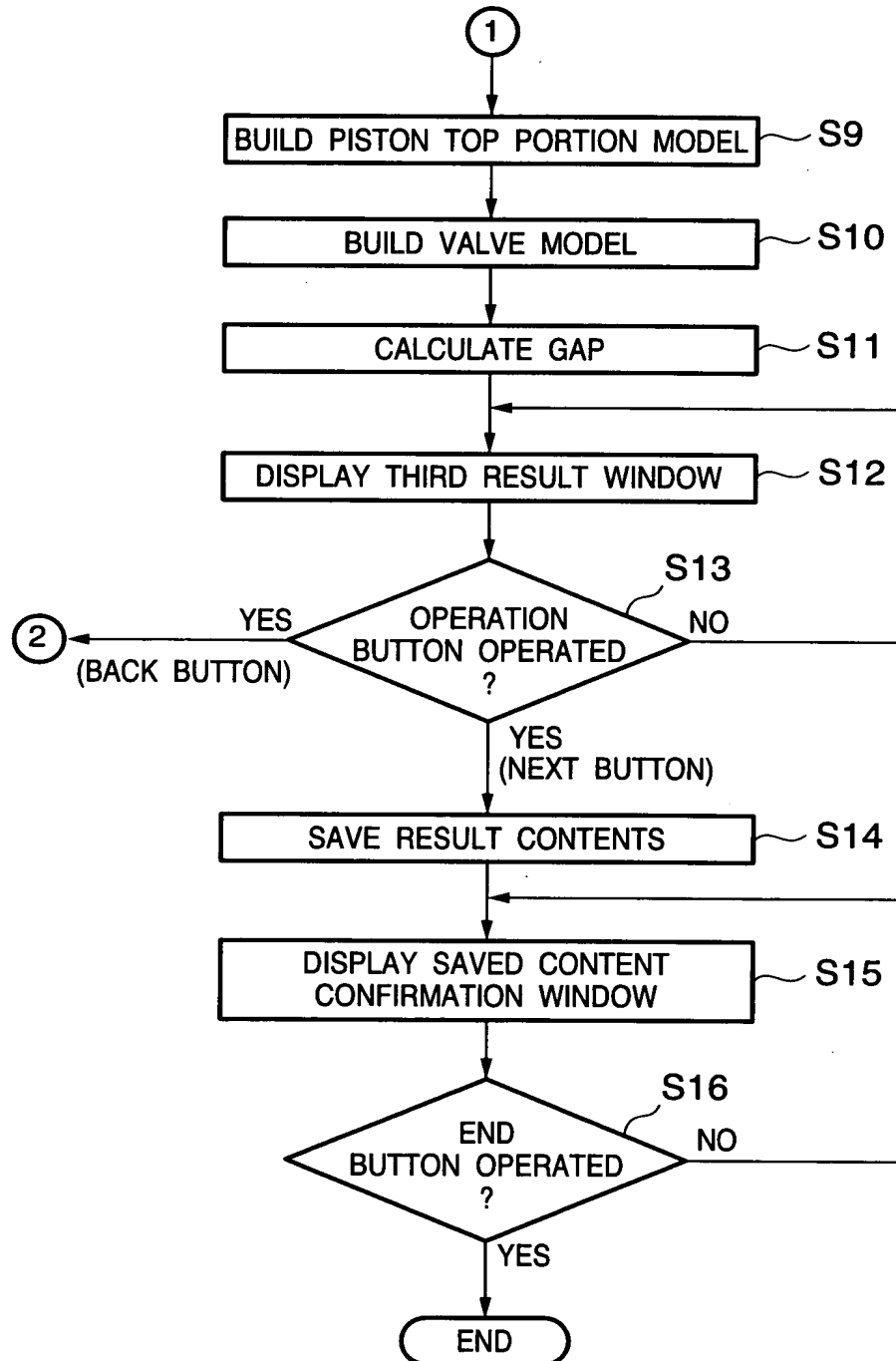
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**FIG. 15**



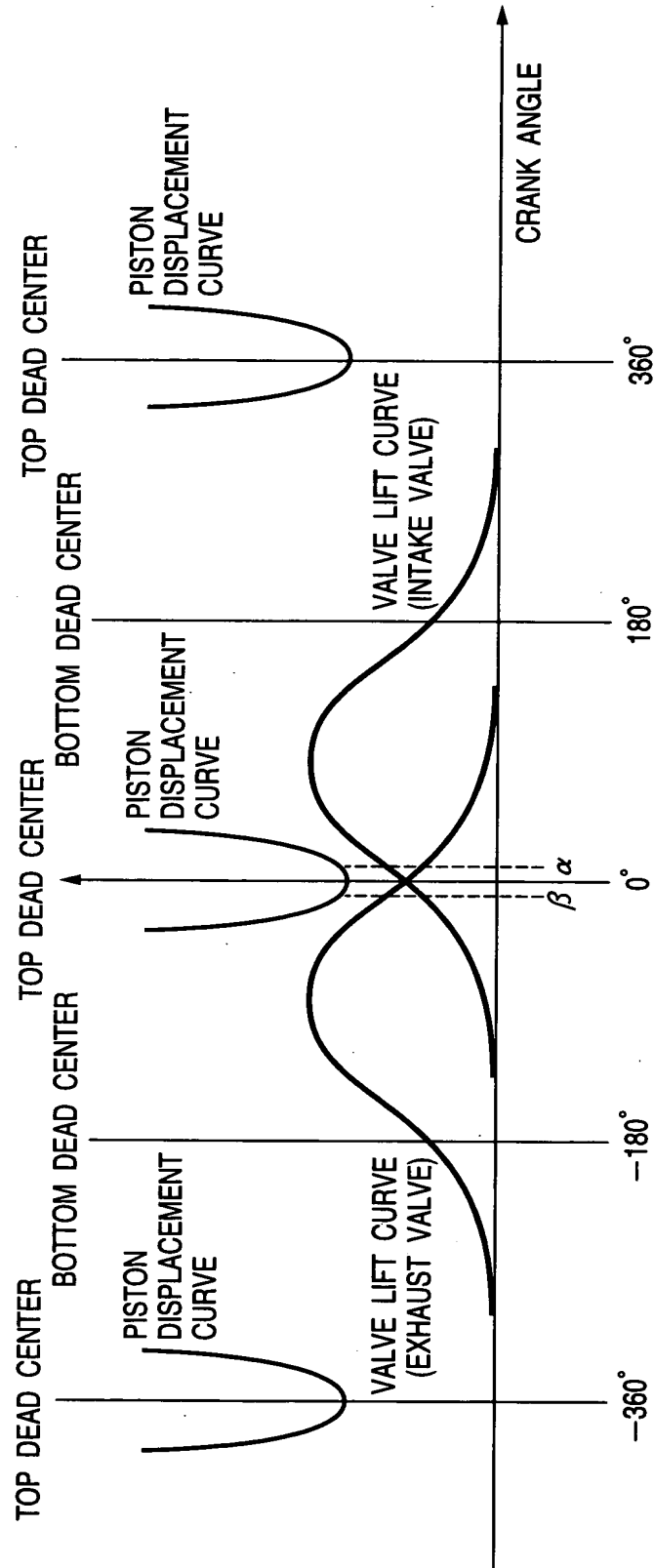
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## FIG. 16



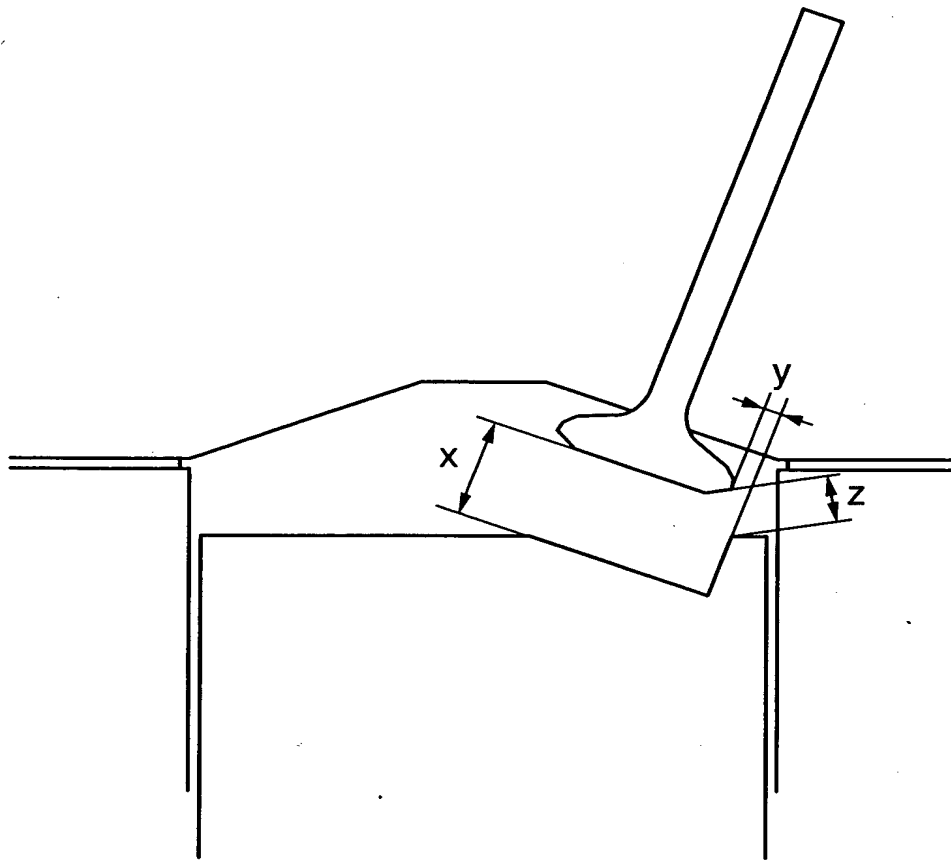
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FIG. 17



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**FIG. 18**



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**FIG. 19**

